

CLAIMS

What is claimed is:

1. A method, comprising:
determining a first gain setting for a communication device;
storing said first gain setting in memory in the communication device;
transmitting a calibration signal;
changing a second gain setting until transmit power of the communication device
is at a predetermined level;
obtaining a value indicative of the transmit power; and
storing the second gain setting and the value indicative of the transmit power in the
communication device's memory.
2. The method of claim 1 wherein transmitting the calibration signal comprises
transmitting a tone or other constant envelope signal.
3. The method of claim 1 wherein obtaining the value indicative of the transmit power
comprises measuring transmit power of the communication device while transmitting said
calibration signal.
4. The method of claim 1 further comprising periodically transmitting the calibration
signal, measuring transmit power, and adjusting a gain of an amplifier in the
communication device based on the measurement of the transmit power.

5. The method of claim 4 wherein periodically adjusting the gain of the amplifier comprises adjusting the gain until the transmit power reaches at least a threshold value.
6. The method of claim 4 wherein determining the first gain setting occurs at an ambient temperature that is different from an ambient temperature at which the calibrator signals are periodically transmitted.
7. A method, comprising:
retrieving a calibrated gain value from memory in a communication device;
changing a gain of an amplifier in the communication device to have the retrieved calibrated gain value;
transmitting a calibration signal;
measuring transmit power of the communication device while transmitting the calibration signal until the transmit power reaches at least a threshold value;
computing a new gain value of the amplifier based on the measured transmit power after the transmit power reaches at least the threshold value; and
changing the gain of the amplifier to be the new gain value.
8. The method of claim 7 further comprising transmitting data packets with the amplifier having the new gain value.
9. The method of claim 7 wherein transmitting the calibration signal comprises transmitting a tone or other constant envelope signal.

10. The method of claim 7 further comprises determining the calibrated gain value by calibrating the communication device using the calibration signal after calibrating the communication device for error vector magnitude.

11. A wireless communication device, comprising:

a baseband processor;

an antenna;

a radio coupled to the antenna and the baseband processor, said radio containing
a variable gain amplifier and a power detector that measures transmit
power of the communication device;

wherein the baseband processor causes the radio to change a gain value of the
variable gain amplifier to a previously stored calibration gain value, emit a
calibration signal, and determine a new gain value for the variable gain
amplifier based on a power measurement made while emitting the
calibration signal.

12. The wireless communication device of claim 11 wherein the baseband processor causes the radio to change the gain value, emit the calibration signal and determine the new gain value at periodic intervals during a calibration mode of the wireless communication device.

13. The wireless communication device of claim 11 wherein the baseband processor causes the radio to change the gain value of the variable gain amplifier until the transmit power is within a predetermined range.

14. The wireless communication device of claim 11 wherein the baseband processor computes a correction factor to be used to determine the new gain value, the correction factor is a function of the power measurement.

15. The wireless communication device of claim 11 wherein the calibration signal comprises a tone or other constant envelope signal

16. A wireless communication device, comprising:

a baseband processor;

an antenna;

a radio coupled to the antenna and the baseband processor, said radio containing
a variable gain amplifier and a power detector that measures transmit
power of the communication device;

wherein, after the radio is optimized for error vector magnitude, the baseband
processor causes the radio to transmit a calibration signal, change a gain
value of the variable gain amplifier until transmit power of the
communication device is within a predetermined range.

17. The wireless communication device of claim 16 wherein the gain value at which the transmit power is within the predetermined range and a value indicative of the transmit power are stored in non-volatile memory in the wireless communication device.

18. The wireless communication device of claim 16 wherein, at periodic intervals during while transmitting data packets, the baseband processor changes a gain value of the variable gain amplifier to a previously stored calibration gain value, causes a calibration signal to be emitted, and determines a new gain value for the variable gain amplifier based on a power measurement made while emitting the calibration signal.

19. The wireless communication device of claim 16 wherein the calibration signal comprises a tone or other constant envelope signal

20. A storage medium in which code is stored, said code being adapted to be executed by a central processing unit ("CPU") and, when accessed by a CPU, causes the CPU to:

- determine a first gain setting for a communication device;

- store said first gain setting in memory in the communication device;

- transmit a calibration signal;

- change a second gain setting until transmit power of the communication device is at a predetermined level;

- obtain a value indicative of the transmit power; and

store the second gain setting and the value indicative of the transmit power in the communication device's memory.

21. The storage medium of claim 20 wherein the calibration signal comprises a tone or other constant envelope signal.

22. The storage medium of claim 20 wherein the code causing the CPU to obtain the value indicative of the transmit power comprises causing the CPU to measure transmit power of the communication device while transmitting said calibration signal.

23. The storage medium of claim 20 wherein the code also causes the CPU to periodically transmit the calibration signal, measure transmit power, and adjust a gain of an amplifier in the communication device based on the measurement of the transmit power.

24. A storage medium in which code is stored, said code being adapted to be executed by a central processing unit ("CPU") and, when accessed by a CPU, causes the CPU to:

retrieve a calibrated gain value from memory in a communication device;

change a gain of an amplifier in the communication device to have the retrieved calibrated gain value;

transmit a calibration signal;

measure transmit power of the communication device while transmitting the calibration signal until the transmit power reaches at least a threshold value; compute a new gain value of the amplifier based on the measured transmit power after the transmit power reaches at least the threshold value; and change the gain of the amplifier to be the new gain value.

25. The storage medium of claim 24 wherein the code also causes the CPU to transmit data packets with the amplifier having the new gain value.

26. The storage medium of claim 24 wherein the code also causes the CPU to determine the calibrated gain value by calibrating the communication device using the calibration signal after calibrating the communication device for error vector magnitude.